JA
37
.H43
no.120

OF MICHIGAN

PERIODICAL
READING ROOM

The Population Explosion

Karl Sax

UNIVERSITY OF MICHIGAN
GENERAL LIBRARY

HEADLINE SERIES

THE POPULATION EXPLOSION, By Karl Sax Page 3

Most of us, when we think about world affairs and the grave decisions that confront us in foreign policy, think of dramatic incidents like the Korean war or the Suez crisis. We are apt to forget that behind the black headlines heralding new political and military explosions, a far more dangerous explosion may be in the making—the rapid growth of the world's population as compared with available resources of food, raw materials and manufactured goods. Here Dr. Sax discusses ways and means of averting this explosion.

TALKING IT OVER, A Discussion Guide Page 55

NUMBER 120

NOVEMBER - DECEMBER 1956

The Author

KARL SAX, professor of botany at Harvard University at the Arnold Arboretum and the Bussey Institution, has published more than a hundred papers in the fields of genetics, cytology, horticulture and demography. He is the author of *Standing Room Only* (Boston, Beacon Press, 1955).

HEADLINE SERIES, No. 120, November 20, 1956, published bimonthly by the FOREIGN POLICY ASSOCIATION, INC., 345 E. 46th St., New York 17, N. Y. JOHN W. NASON, President; VERA MICHELES DEAN, HEADLINE SERIES Editor; FELICE SOLOMON, Assistant Editor. Subscription rates, $2.00 for 6 issues. Single copies, 35¢. ENTERED AS SECOND CLASS MATTER AUGUST 19, 1943, AT THE POST OFFICE AT NEW YORK, N. Y., UNDER THE ACT OF MARCH 3, 1879.
Copyright, 1956 by FOREIGN POLICY ASSOCIATION, INC. *Any opinions expressed or implied in Foreign Policy Association publications and program materials are those of the authors and not of the Association.* Produced under union conditions and composed, printed and bound by union labor. Manufactured in the United States of America.

Library of Congress Catalog Card No. 56-12636

The Population Explosion

by Karl Sax

THE RECENT EXPLOSIVE GROWTH OF THE WORLD'S population could be a greater threat to world peace and prosperity than the atomic bomb. Atomic energy may never again be used for human destruction, since it is now realized that an atomic war on a global scale would destroy our modern civilization and could exterminate the human race. The countries which now have atomic arsenals are relatively prosperous or have sufficient land and other resources to permit adequate living standards for their present populations. The leaders of these countries know that an atomic war would be mutual suicide. Although we do not live in a rational world, the consequences of modern war are so terrifying that atomic energy may henceforth be confined to peaceful purposes. But the population bomb has already exploded in parts of the world, and further explosions are inevitable unless excessive population growth can be reduced.

During 1955 more than 40 million people were added to the world population. If this growth trend continues the world must find food, clothing and shelter, *during the next ten years,* for at least 450 million more people, a population greater than that of all of North America, Central America and South America com-

bined. Yet nearly two-thirds of the world's 2.7 billion people now live at little above mere subsistence levels, with inadequate food, housing and medical care. Most of these people are illiterate and have neither the knowledge nor the skills to practice an efficient agriculture or to develop an industrial economy. It will take time to provide the needed education and facilities for the development of their agricultural and industrial resources. Yet it is in these countries of Asia, the Middle East, Africa and Latin America that population growth or potential population growth is the most rapid. If these nations are unable to provide reasonable living standards for their present population, how are they to provide for several hundred million more human beings during the next decade?

No Peace with Hunger

The people of these areas are becoming restless and are ready for revolt. They now know that poverty and hunger are not inevitable and they too wish to share the fruits of modern science. They want independence, and colonial empires are rapidly being disintegrated. Foreign-controlled industries are looked upon with suspicion. Internal reforms are in progress in many areas. But it will take time to develop modern agriculture and industry. Most of these nations will remain poor and hungry for at least several decades. As Seneca observed in Roman times, "A hungry people will not endure reason; they will not listen to justice; and they will not bend to any prayers for mercy."

It will be difficult enough for agriculture and industry to meet the needs of even the present populations in most of the underdeveloped areas, but if populations grow as rapidly as any probable advances in agriculture and industry, the only result will be more people living in poverty. In desperation these people will turn to any demagogue who promises the impossible and are likely to make irresponsible political alliances and economic demands. If they are able to make progress industrially, the people of the

densely populated areas will be in a position to demand more space, as Japan did in the 1930's. And expansion of territory in a world with no new frontiers means war. Today few, if any, people are willing to starve in peace.

War to relieve population pressure and poverty is an old story. Pope Urban II, in initiating the First Crusade in 1095, attempted to justify a war of aggression as follows: "Let none of your possessions detain you, no solicitude for your family affairs, since this land which you inhabit, shut in on all sides by the sea and surrounded by mountain peaks, is too narrow for your large population; nor does it abound in wealth; and it furnishes scarcely food enough for its cultivators. Hence it is that you murder and devour one another and wage war and frequently you perish by mutual wounds. Let, therefore, hatred depart from among you; let your quarrels and wars cease; and let all dissensions and controversies slumber. Enter upon the road to the Holy Sepulcher; wrest the land from the wicked race, and subject it to yourselves."

In more recent times it was not always poor and hungry nations which engaged in aggressive wars to relieve actual or imagined population pressures. General von Bernhardi in 1911 outlined the philosophy that led to World War I. In his book *Germany and the Next War* he stated: "Strong, healthy and flourishing nations increase in numbers. From a given moment they require new territory for the accommodation of their surplus population. Since almost every part of the globe is inhabited, new territory must, as a rule, be obtained at the cost of its possessors, that is to say, by conquest, which thus becomes the law of necessity."

Population Pressure and War

Population pressures were also the cause of, or at least the excuse for, World War II. Adolf Hitler, you will recall, maintained that Germany was overpopulated and that its people needed more *Lebensraum* ("living space"). Instead of suggesting that birth rates be reduced, Hitler appealed for higher birth rates

to provide larger armies so that they could invade and take the land of their neighbors. Since the neighboring countries were already well populated, the position of Germany could not be improved unless these peoples were killed, enslaved or exploited. Similar excuses for wars of aggression were made by Mussolini and Tojo, whose countries were really suffering from excessive population growth. They, too, appealed for larger populations instead of advocating a reduction of the birth rates. The ambitions of these dictators were not realized, but they led to a long and expensive war which depleted the industrial resources essential for economic development. Fortunately the birth rates in Germany, Italy and Japan are now among the lowest in the world, but Italy and Japan are still suffering from excessive population pressure because the necessary measures were not adopted much earlier.

Warren Thompson, former director of the Scripps Foundation for Research in Population Problems, in his book *Danger Spots in World Population,* published in 1929, predicted that an explosion was inevitable in Japan and Italy because of population pressures. Other demographers had also predicted that Japan's population problems would lead to war. As Henry Pratt Fairchild has pointed out, "As long as human groups continue to increase without restraint upon a restricted area of land we may confidently expect them, in the final extremity, to fly at each other's throats for the possession of what land there is, finding a pretext in national honor or invaded rights if one is to be found, and if not, getting along without a pretext."

Consequences of Poverty

Although population pressure is an important factor in initiating war, other consequences of excessive populations have long plagued mankind. More than two-thirds of the world's people are subsisting on a diet which in both quantity and quality is inadequate for the maintenance of good health and vigor. The

Race against time.

Food and Agriculture Organization of the United Nations estimates that the average daily requirement of calories per person ranges from 2,250 to 2,710, depending on the climate, the average body size, and the age distribution of the population. The average daily consumption of calories in 1952 ranged from 1,640 in India to more than 3,000 in North America, Oceania and Western Europe. In general, the diets deficient in calories are also deficient

in quality. The British Political and Economic Planning Committee (PEP), on the basis of the FAO world food survey of 1952, estimates that the underfed people of the world include about 98 percent of the Asians, 93 percent of the Africans and about 80 percent of the Latin Americans.

The people of the world who have inadequate food also lack adequate housing, education, transportation, and public-health facilities. They are predominantly subsistence farmers, dependent on human labor for most of their energy needs. The energy consumption (in kilograms of coal equivalent) in 1953 was 110 in India and probably less in China, compared with 8,000 in the United States and 4,500 in England. For all of Asia, with more than half of the world's population, the average national income per capita was only about $50 per year. In North America it was about $1,500 per year, or approximately 30 times that of Asia.

The lack of adequate food and the low level of economic and educational development have led to tragic consequences. Chronic hunger and malnutrition are major causes of the high death rates in most of the underdeveloped countries. In India, according to Dr. Shrimati Chandrasekhar, the death rate is about 30 per 1,000 of population—three times that of the United States. One-fourth of all babies born die before they are a year old. Only half of them survive to the age of 20. Frequent pregnancies with inadequate food or medical care result in the death of many thousands of women at childbirth every year.

Dr. Chandrasekhar estimates that every year in India at least 3 million people die of malaria and that at least 10 million people suffer from this disease. In addition, cholera, smallpox, beri-beri, dysentery, hookworms, tuberculosis and venereal diseases take a heavy toll. The economic consequences of prevalent illness and high death rates are disastrous. Nearly a fourth of all children born must be fed and cared for only to die before reaching the age of productivity. Hunger and disease curtail the output

of those who survive to maturity. Yet the population of India continues to grow at the rate of 5 million more people each year.

Lag in Food

Hunger and poverty are prevalent in practically all of the underdeveloped countries of the world. The introduction of modern public-health services has greatly reduced death rates caused by malaria and other diseases in some of these countries, but there has been no control of the birth rate. As a result the rate of population growth has more than doubled in recent decades, reaching 3 percent annually in some countries. But food production is not keeping pace with population growth. Is there any virtue in preventing death from disease if people must die more slowly from starvation?

If we are to accept the brotherhood of man for all of the world's people, war and poverty must be eliminated. The utmost development of agriculture and industry cannot possibly keep pace for any significant period of time with a population increase due to a controlled death rate and an uncontrolled birth rate. If there is to be any hope for peace and prosperity for all of the world's people, birth rates must be rapidly reduced in most of the world to little more than replacement levels.

Population Growth

MAN HAS LIVED ON THIS EARTH FOR MORE THAN A million years. But it was not until the 16th or 17th century A.D. that the human population reached half a billion. During the past 300 years the world population has increased about fivefold, and in 1956 it numbered more than 2.7 billion. If the *present* rate of increase could be maintained, the world population would increase to nearly 5 billion before the end of this century. But the *rate* of growth has increased rapidly in recent years and may continue to increase for several decades.

The recent rapid growth of the world population is unprecedented in human history. Little is known about birth rates, death rates and population growth before 1650, and even today the data for much of the world are based upon estimates. In general, however, these estimates are sufficiently accurate to indicate the major changes in population growth of both primitive and modern man.

Before the advent of agriculture, some 8,000 to 10,000 years ago, the human population could hardly have exceeded 20 million, according to Sir Arthur Keith, and may have been no more than 5 million. Even with an initial population of several hundred people a growth rate of between .02 and .03 percent per year

would have resulted in a population growth of 5 million to 20 million in 40,000 years. During the food-gathering and hunting era of man's existence populations grew very slowly, with great fluctuations in growth rates from year to year and in different areas.

Food Spurs Growth

With the development of agriculture it was possible to provide the means of subsistence for larger populations. Even with primitive tools it was possible to cultivate the flood plains of the great river valleys and greatly increase man's food supply. The cereal grains could be stored for use during the winter or the dry season, and reserves set aside for years of crop failures. The domestication of animals provided more energy for transportation and for farm work, and insured a reliable source of meat. As a result of the more abundant supply of food, populations grew more rapidly, in spite of disease and warfare. By the year 1000 B.C. the world population probably exceeded 100 million. During the next thousand years it grew more rapidly and at the beginning of the Christian Era apparently numbered between 200 million and 250 million. The average rate of growth during this period has been estimated at about .06 percent annually.

With increased population pressure in the fertile valleys crops had to be grown on the uplands and wooded hills. Here it was difficult to maintain high yields with the equipment and techniques available. Population pressures led to vast migrations and chronic wars, accompanied by famine and pestilence. The world population grew slowly during the first thousand years of the Christian Era and was probably less than 300 million in the year 1000 A.D.

During the next 600 years there was little progress. The concentration of populations in towns and villages, with little sanitary control, facilitated the spread of disease and epidemics. Bubonic plague, the Black Death of medieval Europe, swept both Europe and Asia with devastating results. It has been estimated that about

one-fourth or more of the population of England was killed by the plague of 1348. In spite of famine, plague and war, the world population reached a total of about half a billion between 1600 and 1700 A.D.

Advances in Living Standards

The rapid population growth during the past few hundred years was made possible by advances in agricultural techniques, the Industrial Revolution, the colonization of the Americas, and the recent control of epidemics and diseases. In Europe, North America and Oceania the increase in population was accompanied by great advances in living standards. Since 1650 Europe's population increased sixfold, with a fourfold increase in the standard of living. The United States and Canada, rich in natural resources and with a population of only 1 million in 1650, were able to absorb much of Europe's surplus population and maintain a high rate of natural increase. The present population of about 180 million enjoys the highest living standards in the world, as measured by the consumption of material resources. Similar progress has been made in Western Europe and Oceania.

In most of the world the result of population growth has only been that more people live in poverty. The fivefold increase in the population of Asia since 1650 was not accompanied by any increase in the level of living for the great majority of human beings. In many areas the masses are probably living as close to subsistence levels as they did 300 years ago. Africa, not densely populated and with only a doubling of the population, has shown little economic progress. Latin America, sparsely populated in 1650, now has a population nearly equal to that of North America, but lags far behind in economic and industrial development.

These underdeveloped areas of the world have benefited little from recent industrial development or the opening of new land frontiers. Most of the recent population growth is the result of the control of epidemics and of public-health programs introduced by the Western world.

The trend in the *rate* of growth indicates that the world population may increase even faster in the immediate future. During most of man's existence growth rates could not have been much higher than .02 percent annually. They increased slowly with the advent of agriculture but probably did not reach 0.1 percent until about the beginning of the Christian Era. The average annual growth rate was approximately 0.4 percent for the period 1650-1850, 0.7 percent between 1850 and 1900, and 0.9 percent for 1900-1950. The 1953 rate is estimated at 1.33 percent, a rate which would double the population in about 50 years. But the present growth is far from the possible maximum.

Faster Rate Ahead

Natural growth rates of nearly 3 percent or more have been recorded for a number of countries during short periods of time—the United States between 1790 and 1810, Ceylon in 1948-49, Puerto Rico in 1946-50—and during the past decade Mexico, Costa Rica and several other countries have reported a natural increase of about 3 percent annually.

Under favorable circumstances even higher rates of increase are possible. The population of the small island of Rodriguez in the Indian Ocean is estimated to have increased from 400 in 1850 to over 15,000 in 1950. This 37-fold increase in a single century indicates an average annual growth rate of more than 4 percent. This growth rate has been equaled by the Hutterites, a group of communal farmers in north-central United States. The Hutterites may be able to expand their farms, but the Rodriguez islanders are reduced to about one acre per family, with a declining standard of living.

Standing Room Only

Growth rates of even 1 percent per year could not long be maintained, even with a small initial population and ample land. Let us assume, for purposes of illustration, that the human race began with Adam and Eve in the year 4004 B.C. If their descendants in-

creased at the rate of 1 percent annually the population would have reached 4 billion by the year 1900 B.C., and at the beginning of the Christian Era there would have been standing room only on the entire land surface of the earth.

With birth rates of 40-45 per thousand in most of the world, the reduction of death rates to 10-15 per thousand of population must result in explosive population growth. Growth rates of 3 percent annually would double the populations in 24 years, but in most of the underdeveloped countries the people are already living at subsistence levels. In the densely populated countries of Asia the resources, even if fully developed, are not sufficient to provide adequately for much larger populations. Growth rates of even 1 percent per year could not long be sustained. Population growth must be curtailed either by high death rates or by low birth rates.

The Demographic Transition

The nations of Western Europe, North America and Oceania have been able to sustain a great increase in population growth during the past 300 years and yet attain high standards of living for the present populations. Considerable progress has been made in eastern and southern Europe and in Argentina and Uruguay, but in most of Asia, Africa and Latin America population pressure has absorbed most or all of the advances in agricultural production, and suppressed or delayed industrial development.

Since the Western nations have been able to escape from poverty, why cannot the underdeveloped countries of the world follow the same paths of escape? A study of the progress of the Western nations during recent centuries shows that the paths of escape are long and steep and that some are no longer open. One of the most essential paths of escape, the control of the birth rate, must be traveled very rapidly if it is not to be blocked by an avalanche of population.

The measures which safeguarded the Western nations from being crushed by population pressure were as follows:

1. The development of an efficient agriculture.
2. The development of industry.
3. The opening of the New World.
4. Colonial empires.
5. The reduction of the birth rate.

An efficient and productive agriculture was necessary to feed the growing population and to release manpower for industry. As people left the farms for the factories the remaining farmers had to increase production to feed those in industry. Most countries did not attain an adequate industrial production until about half of the working population was released from agrarian labor.

Industrial Development

Industrial development is necessary to provide equipment and chemicals for a more efficient agriculture, to furnish better means of transportation and to produce the necessities and luxuries of life at low cost. In the case of Western Europe industrial exports permitted substantial food imports, so that several countries were able to sustain populations greatly in excess of domestic food resources.

The New World provided space for population migration and relieved population pressures in European countries at a critical period in their economic development. About 60 million Europeans migrated to the Americas and other newly developed countries, largely in the 19th and early in the 20th century. Today, there are about as many people of European descent overseas as there are in Europe. In analyzing the role of the New World in Europe's economic development, Walter Prescott Webb concludes that "without this frontier modern Europe would have been so different from what it is today that it could hardly be considered modern at all."

North America, with ample land and resources, was able to

absorb Europe's surplus people and their industrial culture, and expand its population rapidly with rising living standards. Similar expansion on a much smaller scale occurred in Australia and New Zealand.

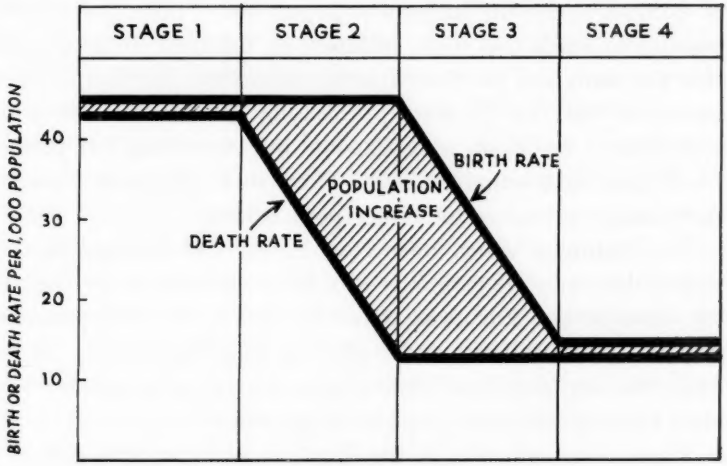
Many of the European countries also benefited temporarily from colonial empires, which provided food and raw materials at little cost. In the long run this economic parasitism of other countries proved to be a costly policy, both for the parasite and for the host.

Control of Birth Rate

The most important factor in the economic and cultural development of the Western nations was control of the birth rate. Without the reduction of birth rates the pressure of population on food supplies would have required more intensive cultivation of the land and less manpower for industry. The population would have lived so close to subsistence levels that it would have been difficult, if not impossible, to accumulate the needed capital for industry, and people living in poverty are not able, or inclined, to provide programs essential for economic progress. The decline in the birth rate followed the decline in the death rate by about a hundred years; but death rates were relatively high during this interval, and the rate of population growth seldom reached 1.5 percent per year. By the time that modern medicine began to cut death rates to low levels, the birth rate had declined.

During the demographic transition—the transition from a high-birth-rate and high-death-rate culture, with low living standards, to a low-birth-rate and low-death-rate culture, with high living standards—the population of Western Europe increased more than threefold. France, which began its transition earlier, had only about a twofold increase; but the population of England increased fivefold, and the people of predominantly English descent have increased at least tenfold since 1800. If the densely populated underdeveloped countries today must look forward to a

FOUR STAGES OF TRANSITION – CHART



similar increase in their population, there is little hope that they can complete the demographic transition. Many of these underdeveloped countries are now growing at the rate of 3 percent per year, a rate which, if continued, would double the population in 24 years. England, during the cycle of most active growth, required more than 50 years to double its population.

Four Stages of Transition

The demographic transition normally involves four successive stages. The first stage, characteristic of all parts of the world before the 17th century, is that of high birth rates nearly balanced by high and fluctuating death rates, which result in a slow growth of population. The second stage is one of high birth rates with declining or low death rates. This is the stage of rapid and accelerating growth. Most of the underdeveloped countries of Asia, Africa and Latin America are in this stage. The third stage is one of declining birth rates with declining or low death rates. In this stage are most of the countries of southern and eastern

Europe, the U.S.S.R., Japan and Argentina. The fourth stage is one of low birth rates and low death rates with a slowly growing, or even an essentially stationary, population. France was the first country to reach this stage, followed by England, Belgium, Austria, Germany and the Scandinavian countries. The United States before World War II was approaching birth rates little above replacement levels, as were Canada and Australia, but postwar birth rates have remained high. These three countries, however, have ample resources for larger populations.

The countries which have reached the fourth stage in their population cycle are generally in a favorable position at the present time. Several European countries have excessive populations, and the loss of colonies and trade may retard prosperity. In general, however, the development of resources is at present more than keeping pace with population growth.

Most of the countries in the third stage of the cycle should be able to complete the transition. Birth rates are relatively low in most countries of eastern and southern Europe and are now at a low level in Italy. Even the U.S.S.R. birth rate today is about as low as that of the United States, and its resources are adequate for considerable population growth. This is also true of Argentina. Only Japan, in spite of a rapidly declining birth rate, is in a desperate situation.

The countries which are in the second stage of transition vary greatly in their future prospects. With few exceptions the countries of Africa and South America are not densely populated and could support larger populations. Central America, however, is facing a difficult future because of excessive population growth and limited resources.

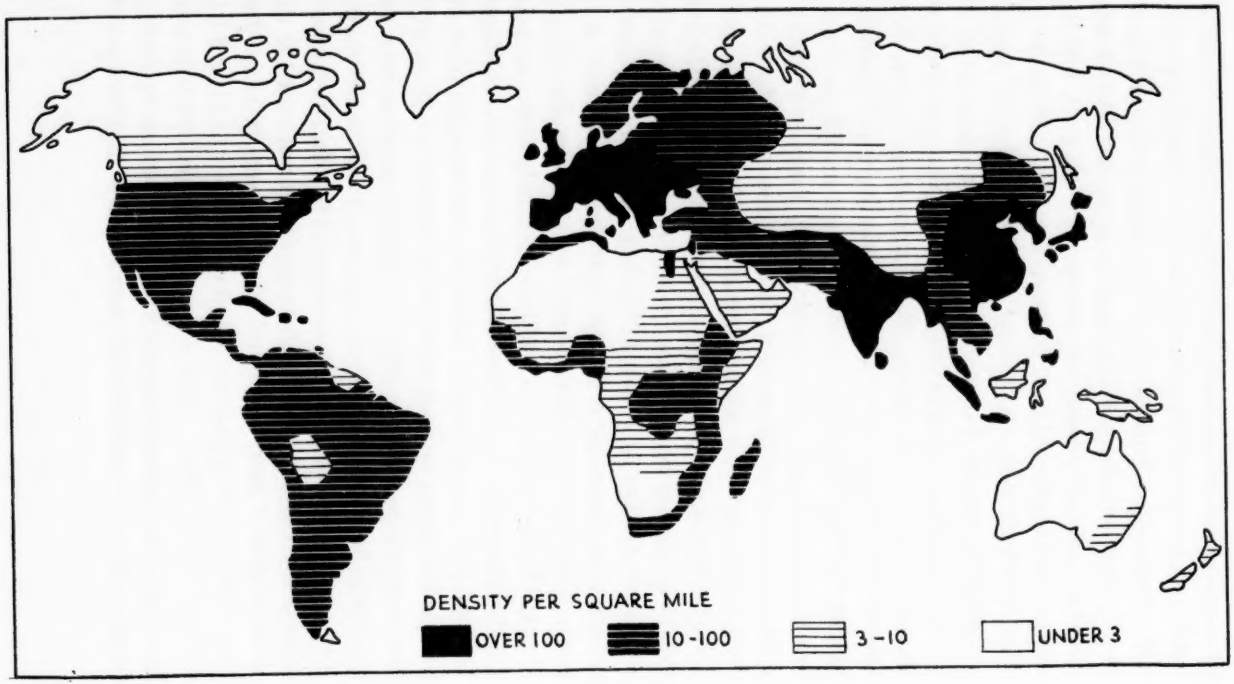
Asia: The Greatest Problem

The greatest problem is Asia, which has more than half of the world's population. In contrast to Europe during the early stages

of transition, most of Asia's arable land is already densely populated, and comparatively little new land is available for cultivation. There are no new frontiers of sparsely populated land which could absorb large numbers of immigrants. Industrialization would be of great value in developing the economy of Asia, but it would not permit substantial food imports, as it did in Western Europe. The countries with excess food are few, and their populations are growing rapidly. Colonial empires are a thing of the past, although "satellite" nations may serve a similar purpose but with the same unfortunate results. Birth rates may be controlled, but the decline of birth rates in any underdeveloped country must not lag behind the decline in death rates, as was the case in the Western nations at a comparable stage. Birth rates must be reduced about as rapidly as modern medicine can reduce the death rates if these countries are to complete the demographic transition.

In Europe the second stage of the demographic cycle began in the 18th century and did not reach the fourth stage until the 20th century. France entered the stage of declining birth rates earlier than the other countries, and death rates were still relatively high, so that when France reached the fourth stage in about 1900 the population had increased only about twofold during the transition. In England the birth rate remained high from 1750 to 1880, rarely falling below 35 per thousand, but during this period death rates declined from more than 30 to 21-22 per thousand. From 1790 to 1880 the natural increase was from 10 to 15 per thousand per year, or 1 percent to 1.5 percent annually. Birth rates began to decline in about 1880; but death rates declined more rapidly, and population growth continued at the rate of more than 1 percent annually for the next 30 years. By 1930 birth rates had dropped to 15 and death rates to 13 and have remained at this level, with a few fluctuations, during the past 25 years, and England has an essentially stationary population. But between 1800 and 1930 the population of England and Wales

DENSITY OF POPULATION



increased from 9 million to 40 million—more than a fourfold increase in 130 years. Yet at no time during the stage of rapid growth did the annual rate of increase exceed 1.5 percent.

Impact of Modern Medicine

The underdeveloped countries of today are beginning their transition in the age of modern medicine when it is possible to reduce death rates to 15 per thousand in a few years, even where the people are living at little above subsistence levels. In Ceylon the recent control of malaria has resulted in a population growth of nearly 3 percent per year. Until 1945 Mauritius, an island in the Indian Ocean with a population of about half a million, had a growth rate well below 1 percent annually, even with a birth rate of more than 40. World War II left the island relatively prosperous, and a public health campaign eliminated malaria. Death rates were reduced to 15 in 1949-53, and birth rates increased to 46.5, with the result that population growth during these years exceeded 3 percent per year.

If continued, this rate would double the population in about 20 years. But Mauritius is already densely populated, with more than 700 people per square mile and only .4 acres of cultivated land per person. Even with the utmost development of agriculture the island could maintain twice the present population only at subsistence levels. There is little prospect for any substantial emigration. Industry, other than processing sugar cane, could not insure greater food imports.

What About Birth Rates?

If there is to be any hope for higher living standards, birth rates must be rapidly reduced to little more than replacement levels. But the reduction of birth rates from 45 to 15 per thousand will take many decades if they depend on the slow cultural changes which led to low birth rates in Europe. In the United States a reduction of the birth rate from 45 to 17 per thousand

required about 100 years. In Japan most of the recent drop in the birth rate is due to abortion, legalized by the state, and in Puerto Rico some of the decline is due to sterilization.

The population problems of the small island of Mauritius are the problems which face the underdeveloped densely populated countries on a much greater scale. India, China, Java, Egypt and many other countries do not have sufficient land for any significant agricultural expansion; increased yields per acre are limited; opportunities for emigration on a large scale no longer exist; industrialization will not permit substantial food imports. But modern medicine will reduce death rates rapidly. If birth rates are not reduced, population growth rates will increase to about 3 percent per year as they have in Central America, and the population will continue to grow until checked by high death rates.

Malthus' Warning

The laws of population growth cannot be ignored. More than 150 years ago Malthus, English clergyman and economist, concluded that populations tend to grow faster than do the means of subsistence and must be controlled either by "positive checks" which result in high death rates or by "preventive checks" which result in low birth rates. Malthus did not approve of artificial birth control and had little faith in "prudential restraint" in married life. He believed that excessive population growth, and the resulting hunger and poverty, were inevitable. It was only natural that his ideas aroused strong opposition, which has continued to the present day. But his basic concept is as valid now as it was 150 years ago. Today, however, people can choose which of the two checks are to be used in controlling excessive population growth—high death rates or low birth rates.

Food for the World

NEVER IN HUMAN HISTORY HAVE ALL OF THE world's people had enough to eat. Populations tend to grow as fast as the available food supply. Any surplus food has always been absorbed by the growing population until only subsistence diets were available to most of the world's people. Recent advances in agriculture, the opening of the New World, and the control of the birth rate have enabled about a third of the world's people to enjoy adequate diets. But about two-thirds still live on diets inadequate in both quantity and quality.

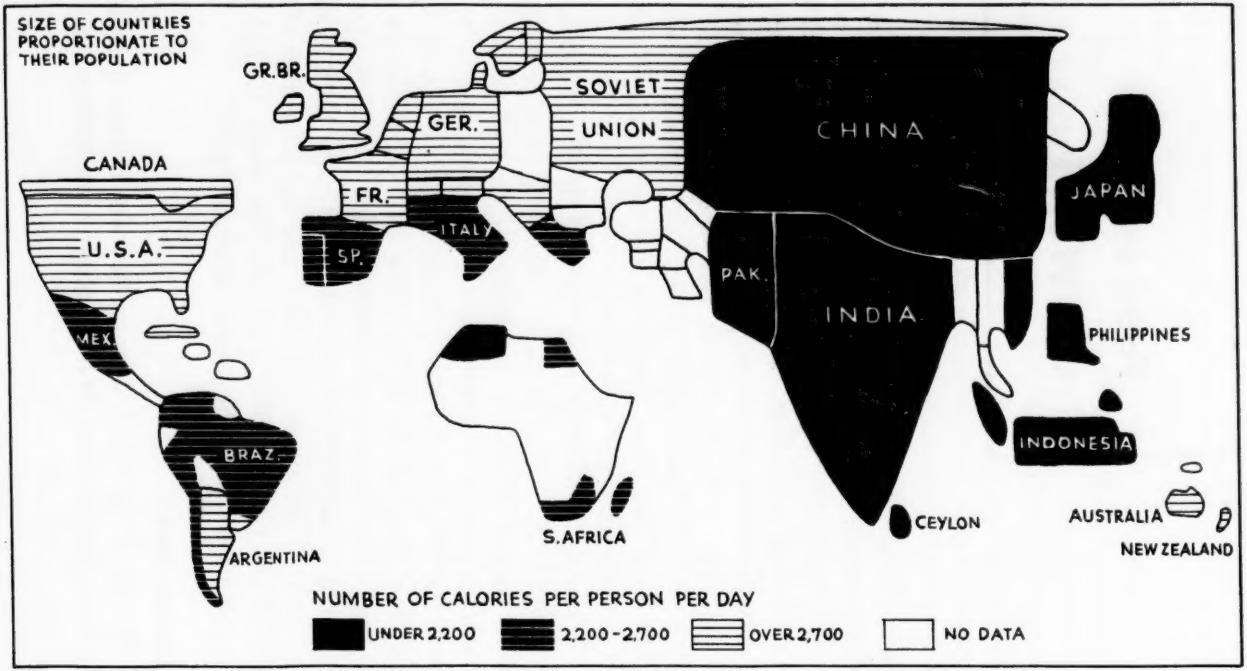
According to the 1955 report of PEP, *World Population and Resources,* the number of people "underfed" is 44 percent in Europe (largely in eastern and southern Europe), 80 percent in Latin America, 93 percent in Africa, and 98 percent in Asia. No estimates are given for North America and the U.S.S.R., but it has been estimated that in the 1930's 20-30 percent of the people in the United States were undernourished. The recent reorganization of the agricultural administration in the U.S.S.R. suggests that there is not ample food there, and the percentage of inadequately fed people probably exceeds that which we had in the United States during the prewar depression years.

Deficient Diets

In most of the world, diets are deficient in both quantity and quality. Calories alone do not measure nutritional needs. A peo-

UNIVERSITY OF MICHIGAN LIBRARIES

CALORIE INTAKE



ple may consume an average of more than 3,000 calories per day and still be inadequately fed. If 70 percent or more of the calories are provided from cereals and potatoes, the diet is very likely to be deficient in essential vitamins, proteins and minerals, even if more than adequate in calories. If, on the other hand, 35 percent or more of the calories are from meat, milk, poultry, eggs or fish, the diet is of good quality and adequate even with the minimum calorie requirements. Merrill K. Bennett, of the Food Research Institute, has estimated on this basis that before World War II about three-fourths of the world's people lived in countries where the prevailing diets were qualitatively inadequate. In most of these countries there were also calorie deficiencies.

THE RACE BETWEEN POPULATION GROWTH AND FOOD PRODUCTION
(Estimates from PEP, *World Population and Resources*)

Region	Percent of Population Underfed	Population 1952 Millions	Ave. annual increase-percent	
			Population 1948-51	Food Production 1934-38 to 1950-52
Oceania	nil	13	2.8	0.8
N. America	low	173	1.6	2.3
Europe[1]	low	308	0.8	0.8
Latin America	80	170	2.4	1.7
Africa	93	157	1.7	1.8
Middle East	high	129	2.2	1.5
Far East[2]	98	765	1.3	0.04
TOTAL	73	1,715	1.47	0.85

[1] Excluding Eastern Europe, the U.S.S.R. [2] and China, with a total population of about 800 million people, most of them underfed.

'Original' Calories

A better comparison of dietary levels can be expressed in terms of "original" calories. Original calories include not only the grains and tubers used directly by man but also the grain and hay fed to livestock to produce meat, milk and eggs. In the United States, for example, the actual calorie consumption is about 3,100 calories, of which at least 40 percent is from animal sources. Since

it requires, on the average, about 7 times as much land to produce food in the form of meat, milk and eggs as it does to produce it in the form of grain and vegetables, the 1,240 calories from animal sources is multiplied by 7. The 8,680 calories from animal sources plus the 1,860 calories obtained directly from plant sources give a total of 10,540 original calories. Such a diet is unnecessary and wasteful.

The original calories consumed per person average little more than 2,100 in India, about 2,600 in China, about 4,000 in Italy and the U.S.S.R. before the war, about 8,000 in prewar England and Denmark, and more than 10,000 in Oceania, North America and Argentina. Before the war the per capita output of animal products in North America was nearly twice that of Europe or Latin America, three times that of the U.S.S.R., and six or seven times that of Africa and Asia.

It might be possible to provide a diet adequate in proteins and vitamins from cereals, vegetables and animal products without exceeding 3,000 original calories. But if the people who now live little above subsistence levels ever attain relatively high living standards, they are not likely to be satisfied with a diet of rice, wheat, beans and tubers, even if supplemented with a little milk, meat and eggs. To assure a complete and adequate diet it would be necessary to provide about 5,000 original calories per person per day—a little less than that of prewar Holland.

In Latin America and Europe there are great differences in dietary levels of different countries. In the countries of northwestern Europe the people are well fed, but in southern Europe diets are inadequate. The people of Argentina and Uruguay have ample food, but most of the countries of Central America are deficient in both calories and protective foods.

For the world as a whole, food production did not keep pace with population growth during the postwar period until 1952-53. According to the FAO report, food production has exceeded population growth in recent years but is still below prewar levels in

the Far East. With few exceptions, only the countries of Oceania, North America and northwestern Europe have ample or adequate diets. As a rough approximation the average per capita consumption in western and southern Europe—about 40 percent above the present world average—can be considered adequate in calories and protective foods. On this basis the original calories could be reduced to about half the present level in Oceania, North America and in several South American countries. In most of Latin America and in the Middle East they would have to be increased by about 50 percent; in Africa, by about 90 percent; and in the Far East the consumption of original calories should be increased by about 150 percent.

Production Must Be Increased

If there is to be any progress the rate of food production must exceed the rate of population growth. Recent UN estimates show population growth rates of 2.4 percent annually in Latin America (and up to 3 percent in several countries), 2 percent in the Middle East, 1.7 percent in Africa and 1.4 percent in the Far East. Almost certainly all of these areas will have population growth rates in excess of 2 percent annually if sufficient food and public-health services are available, and could reach 3 percent. But according to PEP, only North America has shown an average annual increase in food production during the period of 1934-38 to 1950-52 of more than 2 percent. The average annual increase of 2.3 percent over 15 years is impressive, but it must be remembered that the middle 1930's were years of drought and depression, and the 40's and early 50's were years of farm subsidies and generally good weather.

During this period the average annual increase in food production was 1.7 percent in Latin America, 1.8 in Africa, 1.5 in the Middle East and .09 percent in the Far East. In all of these areas food production did not keep pace with population growth. In 1952-53 food production per capita was still below prewar

levels in the Far East and Latin America, but showed some increase in the Middle East and Africa. The FAO estimates for 1956-57, made in 1954, predict a per capita food production at or above prewar levels in most of the world except the Far East. PEP estimates that to meet 1980 food needs world production must be increased at the annual rate of 2.25 percent. Much higher rates will be necessary in underdeveloped areas. In the Far East food production would have to be at least doubled to meet the needs of the present population adequately, which would mean an average annual increase of 3 percent between 1956 and 1980.

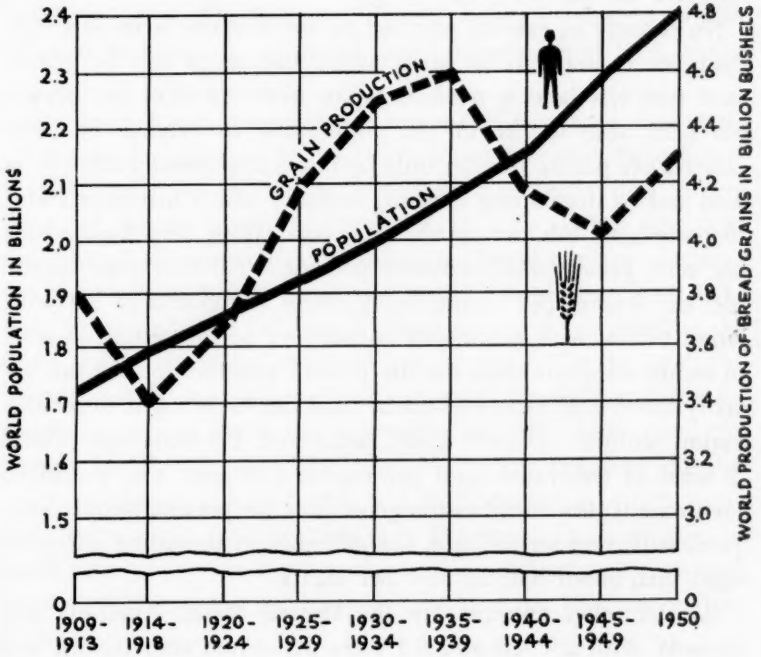
There are examples of a very rapid rate of food production in a few countries. During the past 15 years sugar production has increased at an average annual rate of 3.6 percent in Cuba, and rice production increased 2.4 percent in Thailand. These are isolated examples, and none cover a period of more than 15 years. In the United States food production between 1910 and 1948 increased only 1.5 percent per year. According to PEP, food production in Japan rose at the rate of 2 percent per year from 1885 to 1915, but since 1915 little gain has been made. Rapid gains can be made in areas of primitive agriculture, but after production reaches high levels the rate of increase can not be maintained. The average increase in Europe from 1934-38 to 1950-52 was only .7 percent annually.

No Common Trough

For the world as a whole PEP estimates that an average annual increase of 2.25 percent in food production will be needed to feed the expected population of 3.6 billion in 1980. World totals, however, mean little for those living in food-deficiency areas unless it is assumed that the surplus food will be sent to deficient areas, or that the people of densely populated areas migrate to sparsely populated regions. But, as Dr. John Black, emeritus professor of agricultural economics at Harvard University, has shown, the world's people cannot be compared to a drove of hogs feeding from a common trough. Few countries will be able to import

UNIVERSITY OF MICHIGAN LIBRARIES

POPULATION VS. FOOD



any substantial amount of their food supply, and migration cannot solve the problem of the larger densely populated countries.

Many countries do not have enough arable land to feed present populations adequately. In order to provide good dietary levels, England has to import 60 percent of its food. Although the English farmers are very efficient, and yields per acre are high, there are only .4 acres of cultivated land per capita. Great efforts were made during World War II to bring more land into cultivation, but with limited success. France, with about one acre of cultivated land per capita, is largely self-sufficient in food, as are Denmark and Sweden, with more than one acre per capita. In general, intensive farming of an acre of land in Europe is sufficient to pro-

vide a good diet for one person, but some of these countries do not have an acre of land per person and must import food, use excessive manpower, or go hungry.

No country of eastern Asia has as much as one acre of arable land per capita, but in areas where two crops can be grown each year less land is needed. Japan with .15 acres per person has been able to provide its population an average of 2,150 calories per person per day only by importing about a fifth of its food and by developing a fishing industry which furnishes about 70 pounds of fish per capita each year. With very high yields per acre, Japan could probably provide a 5,000 original-calorie diet on .4 acres per capita, but perhaps at the cost of excessive labor. China, with about half an acre per person, might be able to assure adequate diets for the present population, but not for many more; and little additional land can be brought into cultivation without excessive costs. India and Pakistan have about .8 acres of cultivated land per capita, but they, too, would be fortunate if they could assure good diets for present populations. Java, with very fertile land, has difficulty in providing adequate food with about half an acre per capita.

At the other extreme are the United States, Australia and Canada, with 2.9, 4.0 and 6.5 acres per capita respectively, and perhaps 50 percent more which could be cultivated if necessary. Although yields per acre are not high compared with those of Western Europe, these countries have ample food and some to spare in good years. They could provide adequate food for much larger populations if necessary.

Is There Room for Increase?

Although it is unlikely that mass movements of food or people will occur, let us assume that world population and food production can be considered as a unit. Those who envisage a great increase in world food production usually look to the tropics. Robert Salter, of the United States Department of Agriculture,

UNIVERSITY OF MICHIGAN LIBRARIES

in 1947 estimated that 300 million acres of new land could be brought into cultivation in the North Temperate Zone and 1,000 million acres in the tropics. This new land, and a 30 percent increase in yields of land now cultivated, would be more than sufficient to feed well the estimated world population of 1960—which has already been reached.

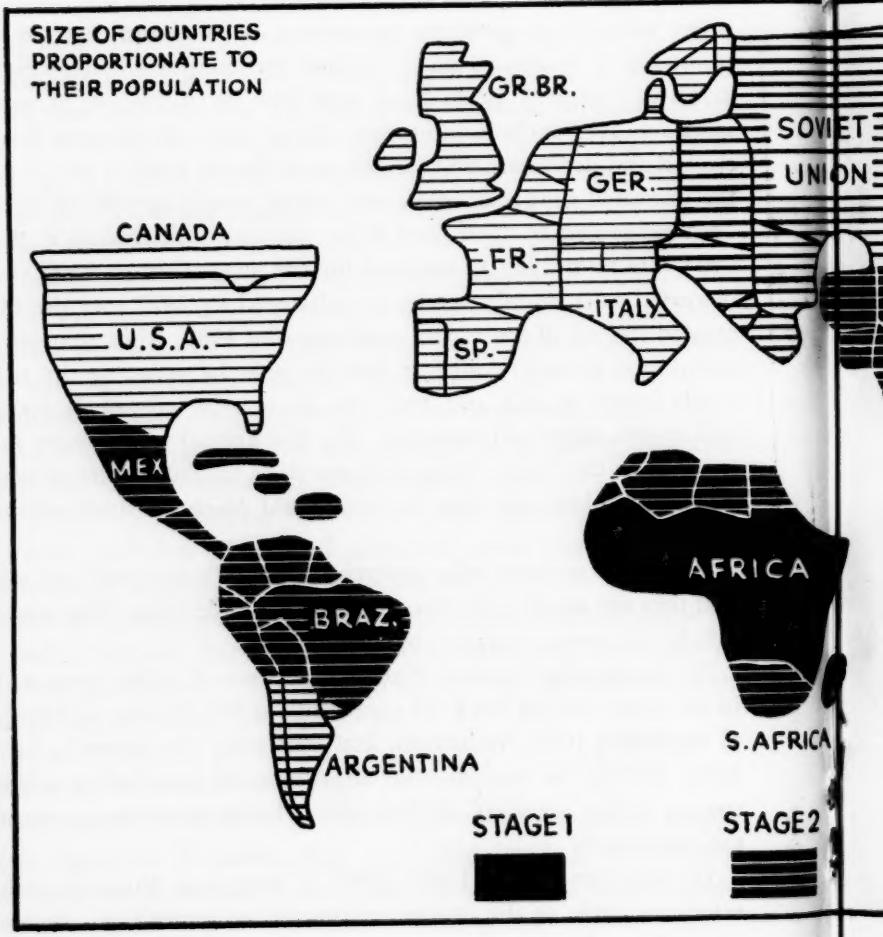
Dr. John Black questions the amount of new land that could profitably be brought into cultivation but considers Salter's estimates of increased yields from land now in cultivation as conservative. He concludes, however: "Even with all this new land cleared and developed and farmed according to modern practices, the increased supply of meats and pulses would already all have been exhausted by 1960; and if the population increased at the same rate after 1960 as assumed for the years 1935 to 1960, the increased milk supply would be exhausted by 1970 and the increased supply of fruits and vegetables by 1980. After that, any population growth would be possible only by reducing the per capita intake of milk and meat and living more on cereals, roots and tubers, sugar and vegetable oils. The animal fats increase no faster than the meats. Even with the diets shifted to cereals and roots and tubers, the food supply would reach its limit within 75 years.

"If anyone wants to take exception [illegible]'s estimates and say that they are not liberal enough, let [illegible]uble them. The result will be the same, except it will be deferred.

"It should now be clear that the two lines of action proposed in the Final Act [of the FAO conference at Hot Springs in 1943], of increasing food production, and increasing the power to buy food, will not be enough—that adjustment of population to resources is also necessary. Indeed, this is by far the largest part of the problem."

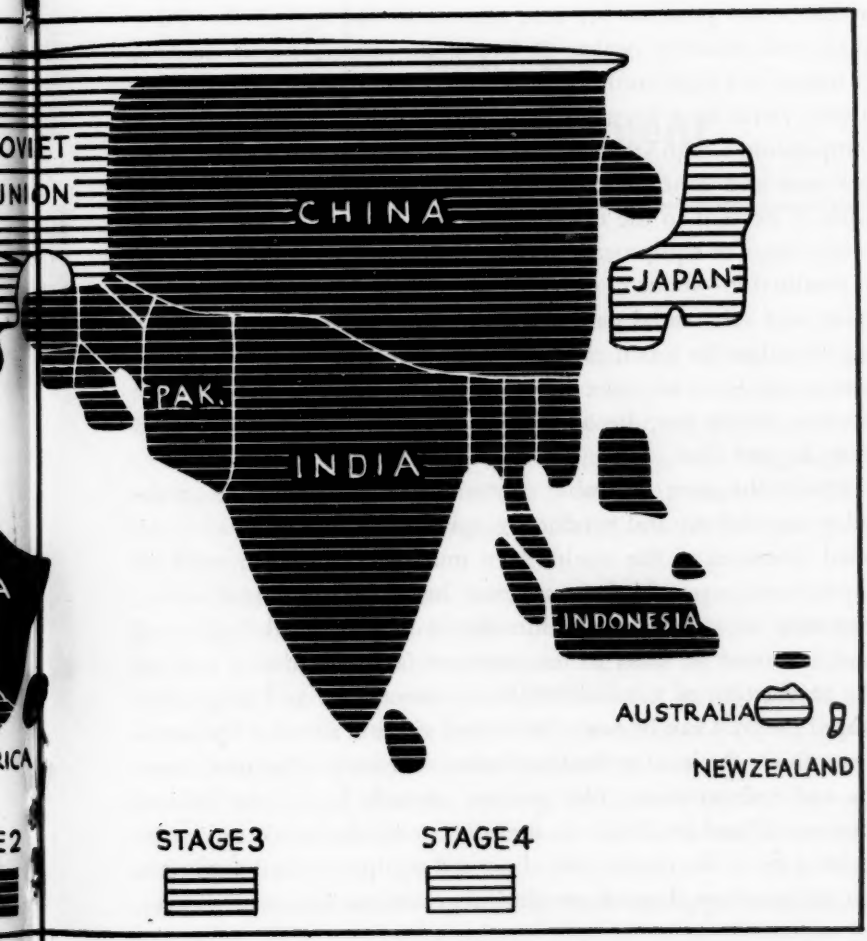
Yet nowhere in this FAO report is there any direct or clear reference made to the control of population growth as a factor in attaining freedom from want.

FOUR STAGES OF TRANSITION—MA



UNIVERSITY OF MICHIGAN LIBRARIES

MAP


CHINA
JAPAN
PAK.
INDIA
INDONESIA
AUSTRALIA
NEWZEALAND
STAGE 3
STAGE 4

New Sources of Food

In recent years there has been considerable speculation regarding new sources of food. The culture of algae (seaweeds) under controlled conditions where optimum temperatures, nutrients and carbon dioxide can be maintained would produce far more carbohydrates and proteins per acre than orthodox agriculture. Pilot-plant tests made by Arthur D. Little, Inc., indicate that yields of 17 tons of dry algae could be produced per acre per year, and much higher yields have been predicted on the basis of other tests. For comparison, a high yield of corn produces only three tons of grain per acre and contains only 10-12 percent of protein, compared with 50 percent in the dried algae. The practical limitations are initial costs of equipment—about $50,000 per acre; the high cost of production—about 27 cents per pound; the limits in its acceptability as a substantial part of the diet; and the necessity of growing the algae in warm climates with abundant sunlight. If new sources of food are ever developed, it will be at least several decades before they become generally available. And the need must be met now.

Under the most favorable conditions it will take time to develop an efficient and productive agriculture in the underdeveloped countries of the world. Men must be trained for work in agricultural research; farmers must be taught new techniques; new crop varieties must be introduced or developed; industrial facilities must be built to manufacture farm machinery and for the production of mineral fertilizers, insecticides and fungicides. Rapid progress can be made by foreign aid, but sustained progress depends on the local agricultural administrators, educators, farmers and industrialists. The greatest obstacle is not the limited amount of land available, the inability to develop it, the necessary techniques or the production of needed equipment and materials, but the pressure of rapid population growth on limited resources.

UNIVERSITY OF MICHIGAN LIBRARIES

Industrial Development

IT HAS ALREADY BEEN POINTED OUT THAT NO COUNTRY has made substantial economic progress until about half of the working population has been shifted from agriculture to industry. Industrial development is needed to provide the necessary construction, transportation, communication, housing, clothing and a more efficient agriculture. Paradoxical as it may seem, the higher the proportion of people engaged in agriculture, the poorer is the diet of the population.

The people of Asia, with three-fourths of the population engaged in food production, have insufficient food. By contrast, Britain, with no more land per capita and only 1/20 of the labor force in agriculture, produces ample food for nearly half of its population. In the United States less than a seventh of our labor force is directly engaged in farming, and with ample land they produce more food than we need, although our per capita consumption of food, in terms of original calories, is four times that of India.

An industrial civilization uses enormous amounts of materials and energy. The per capita consumption of industrial energy in the form of coal, oil, and electric power in North America is

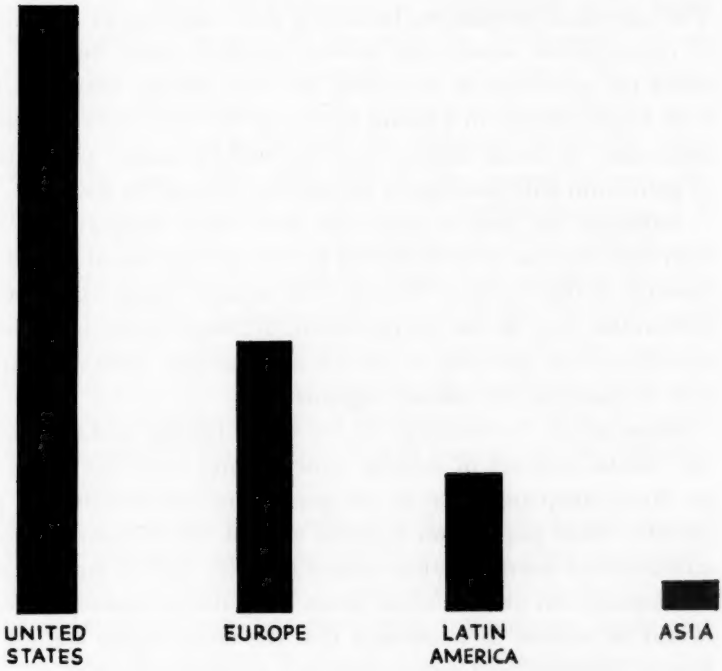
nearly 100 times that of India or China and 8 times that of industrialized Japan. The United States, with only 7 percent of the world's population, now uses about half of the total world consumption of iron, copper, lead and tin; about 60 percent of the world's petroleum production; and 25 percent of the coal.

Nonrenewable Resources

Unlike agriculture, which is based largely on renewable resources, industry is dependent largely upon nonrenewable resources. It is true that coal and petroleum were formed from organic, and thus renewable, sources; but they were accumulated over hundreds of millions of years. For all practical purposes these resources, as well as the metals and minerals, are capital resources and are not replenished each year. Are the capital resources of fossil fuels and of essential metals sufficient to provide all future needs or even the immediate needs of a highly industrialized world population?

The reserves of our capital resources are, of course, not known, but the estimates are not encouraging. PEP estimates that at the 1950 rate of world consumption the probable reserves of iron ore would last 200 years and the potential reserves for 1,200 years. The estimated reserves of copper would last 80 years, but those of tin would be exhausted in 35 years and those of lead in only 25 years. H. L. Keenleyside, speaking before the United Nations Scientific Congress in 1949, expressed the situation as follows: "It is clear that there is no serious and immediate over-all and irreplaceable shortage of any essential minerals. But it is equally clear that the demand for mineral products is increasing at such a rate that unless there is a fundamental change in the economic fabric of human society, we will ultimately be faced with the exhaustion of many of our mineral resources. In some cases, particularly lead, copper and cobalt, and possibly iron and oil, the supply will be exhausted more rapidly than in others. New discoveries, improved methods of extraction and processing, and careful con-

UNIVERSITY OF MICHIGAN LIBRARIES



servation will postpone the advent of critical shortages. Substitution may provide alternate solutions, . . . but this is a hope, not a promise."

Dwindling Reserves

The reserves of energy resources, even without atomic energy, are adequate for the near future. The coal reserves, based on L. C. McCabe's estimates in the UNESCO publication, *Energy in*

the Service of Man (1955), should last several thousand years at current rates of consumption and for more than a thousand years at PEP estimates of the rate of consumption in the year 2000. The reserves of petroleum, including shale deposits, at 1950 rates of consumption would last several hundred years, but the demand for petroleum is increasing far more rapidly than that for coal. Eugene Ayres, in a recent survey of the world fuel situation, concludes, "It seems certain that the world's annual production of petroleum will have fallen far behind demand by 1965."

Although the coal supplies are more than adequate for the next century, coal may be needed for the production of oil before the end of this century. By that time atomic energy may meet a substantial part of our energy needs, although many limitations would seem to preclude its use for automobiles, trucks and tractors, so essential for efficient agriculture.

When all of the countries of the world become industrialized, the capital reserves of critical minerals and fossil fuels will be far from adequate. Even if the per capita consumption of the present world population equaled that of the Western nations, consumption would increase about fivefold; and to attain levels of consumption in the United States more than a tenfold increase would be needed. It is obvious that the entire world cannot be highly industrialized before the 21st century and then only if population growth is controlled and the new frontiers of science are greatly expanded.

Harrison Brown, in his book *The Challenge of Man's Future*, predicts that with abundant atomic energy, it would eventually be possible to obtain the basic raw materials for industry from the air, from the oceans and from ordinary rock. The air would provide oxygen and nitrogen; the oceans would produce hydrogen and magnesium and other elements; and the rocks would yield not only most of the essential metals but also the thorium and uranium needed for atomic energy for many thousands or even millions of years.

UNIVERSITY OF MICHIGAN LIBRARIES

Nuclear Power No Solution Now

But as PEP observes, "The importance to mankind of nuclear power lies not in the present nor in the near future, but in the distant future. There is a good deal of ignorant talk in the press, such as statements suggesting that with the development of nuclear energy as a source of power the world stands on the threshold of a new industrial era. This is surely an exaggeration. It is unlikely that nuclear power will be substantially cheaper than power made from fossil fuels during the present century. Although it may be of great importance to certain countries, it is not likely, for several generations, to be cheaper." Harrison Brown also realizes the difficulties and the immediate needs, writing as follows: "It is clear that the achievement of this condition will require the application of intelligence, imagination, courage, unselfish help, planning, and prodigious effort. And it is equally clear that the time for decision is the present. . . . Man is rapidly creating a situation from which he will have increasing difficulty in extricating himself."

Eventually atomic power will provide for all of our energy needs, but it is unlikely that atomic energy will meet the world's needs during this century. Until satisfactory storage batteries or "electrical accumulators" are developed, automobiles, trucks and tractors must be powered by liquid fuel. The replacement of a V-8 motor by an atomic power plant would increase the weight of the vehicle to about 40 tons.

About 20 percent of the world's people are enjoying the Golden Age of Man, and another 20 percent are making rapid progress. But many countries are rapidly depleting their own resources as well as the readily available resources of their underdeveloped neighbors. The Western nations may deplete the petroleum reserves of the Middle East and Latin America before the underdeveloped countries of these areas even achieve their industrial independence.

Many of the underdeveloped countries have only limited sup-

plies of coal and petroleum. Most of the world's coal is in North America and Asian U.S.S.R. Iron ore is often far from the source of coal, and the costs of transporting coal great distances are high. Even if atomic energy is soon available at moderate cost, it will require several decades to train the necessary personnel to build, equip and operate the industrial plants, the transportation system and the other facilities of a modern industrial state. Of at least equal importance are the educational facilities necessary in a technical age and in a progressive and responsible society. The fruits of science cannot be digested rapidly by an illiterate population. All of this takes time, but populations continue to grow at a rapid rate.

As we have seen, many of the underdeveloped countries, and especially those of Asia, must double their food supply with the little more land that can be brought into cultivation. Industrialization will not permit substantial imports of food into countries with large populations. Emigration on a scale sufficient to relieve population pressure is no longer possible. In these areas industrialization can, however, promote a more productive agriculture by the local manufacture of farm machinery, tools, fertilizers, insecticides and fungicides. It can provide the tools and equipment for clearing land and for irrigation systems. It can provide transport for agricultural products, efficient processing plants, and storage facilities. All of these measures would promote a more efficient agriculture, releasing manpower for industry, education, research, public health and other services.

Recklessness Unnecessary

It is both impossible and unnecessary for all of the world's people to use their resources as recklessly as we are using ours. Transportation is essential, but all of our people could go for an automobile ride simultaneously with all of the back seats empty. Finding a parking space in our big cities is a far more pressing problem than getting enough food or housing accommo-

UNIVERSITY OF MICHIGAN LIBRARIES

dations. The U.S.S.R., with only 25 percent of our industrial capacity per capita, should be able, with its ample resources, to provide adequate living standards for its people if it did not devote such a large part of its output for military equipment. Even Japan, with a per capita industrial output only a tenth of ours, provides a standard of living far above that of the Asian mainland.

It is often assumed that, given sufficient financial aid, the underdeveloped countries of the world could rapidly become industrialized. In 1951 a commission of United Nations experts estimated that such a program for the development of agriculture and industry would cost about $19 billion a year. But according to PEP, these experts underestimated the rapid increase in the recent rate of population growth and probably grossly underestimated future rates of increase. Even $20 billion a year, however, would total $1,000 billion in 50 years. Contributions by the industrial countries would have to cover at least half the cost, particularly in the early stages of development.

If such a program were effective and prevented a third world war, the price would be more than justified. Stringfellow Barr, author, historian and former professor of political science, has estimated that World War II cost the United States alone more than $300 billion, and the cost to the world in money expended and property destroyed was about $2,000 billion. The present "cold war" will cost the world more than $2,000 billion if long continued, and a nuclear "hot war" could wreck modern civilization.

Financial aid and good intentions, however, are not enough if we expect the underdeveloped countries to follow the pattern of the Western nations in effecting their demographic transition. As PEP points out, such measures ignore the fundamental point that in the absence of checks to population, it is the natural increase of population and not the living standards that will rise. "The experience of decades of development under the British in India or Egypt and under the Americans in Puerto Rico shows quite plainly how rising human numbers snatch away the oppor-

tunities for improved standards of life, unless this pressure can be relieved by mass emigration."

Example of Puerto Rico

Puerto Rico offers a good example of the results to be expected if the basic factor for success is ignored. The United States has administered the affairs of Puerto Rico for 50 years without exploitation and with substantial financial contributions. The direct and indirect subsidies amounted to about $1 billion during the 50-year period, or about $20 per capita annually for the original population of 1 million. Schools were founded and public-health facilities were developed. Death rates declined, but birth rates remained high.

By 1932-36 the natural increase in population was 1.9 percent annually, and above 2.5 percent since 1945. By 1953 the birth rate had declined to less than 35 per thousand; but the death rate was only 8.1 per thousand, and the natural increase was 2.7 percent per year. The population more than doubled during the 50 years, and now the 2.25 million people have only .4 acres of cultivated land per capita, few industrial resources and relatively low living standards. Emigration has reduced population pressure considerably, especially in recent years. Since 1951 most of the natural increase in population has been absorbed by migration to the continental United States. Approximately half a million Puerto Rican emigrants and their progeny now live in the United States, about 80 percent of them in New York City.

The development of industry was encouraged by low wages and tax exemptions. The war boom brought greater prosperity. Incomes increased to about $400 per capita in 1943 and have increased somewhat in recent years. Emigration has permitted some progress, but without emigration the United States subsidies would have had little effect. And even with the present scale of emigration, Puerto Rico's future is not encouraging.

Yet these subsidies per capita for the past 50 years in Puerto

UNIVERSITY OF MICHIGAN LIBRARIES

Rico are more than those required to provide the proposed $19 billion per year for all of the people of the underdeveloped countries of the world. If progress in economic development of Asia is dependent on emigration equal to the natural increase, the situation is hopeless. If Asia's death rate were reduced to 10 per-thousand, present birth rates would result in nearly 40 million more people each year.

A rational approach to the problems of economic aid is proposed by our State Department in the Point Four program as follows: "National development must be based upon national resources and must come largely from the people concerned. Assistance and encouragement from abroad can help, but real achievement must depend fundamentally upon the will and determination of the people and the government involved. In the last analysis, economic progress depends not only on the resources but upon the resourcefulness of the people. It is closely related to their habits and attitudes of work, saving, venturesomeness and adaptability. It depends also upon the sound functioning of their governments."

Economic Progress Without Aid

A good example of economic progress without economic aid is Japan. With a copied industrial culture Japan made rapid progress in spite of limited resources. Between 1900 and 1940 savings were about 20 percent of the national income, and from half to three-fourths of the savings were invested. The standard of living, although starting from low levels, increased about 3 percent annually. Japan's industrial development was based on a productive agriculture and fisheries, human skill, intelligence, great energy, cheap labor, modern plant equipment and nearby markets. But population pressure demanded expansion, and expansion led to war. Today Japan has a population of nearly 90 million, with only .15 acres of arable land per person and a food supply below minimum needs.

Before 1870 the population of Japan was essentially stationary at about 30-35 million due to high death rates, abortion and infanticide. During the past 85 years it increased nearly threefold in spite of considerable emigration. Birth rates have been relatively moderate during recent decades at little more than 30 per thousand. Death rates were above 15 until recent years, when as a result of United States public-health programs they declined to 12 in 1948 and to 8 in 1954. The birth rate also declined, and in 1954 was below 20 per thousand, largely as a result of legalized abortion—more than a million in 1953. If it were not for abortion Japan's birth rate would still be above 30.

Even with relatively low birth rates resulting from abortion, Japan is now in a desperate situation. Its population is still growing at the rate of about a million per year.

Irene Taeuber and Edwin Beal, in the Milbank publication, *Demographic Studies of Selected Areas of Rapid Growth* (1945), summarized the basic problems of Japan and the rest of Asia as follows: "The dynamics of [the] fertility decline in Japan during the three-quarters of a century since the opening to the West offer little basis for optimism with reference to the possibilities of an early cessation of population growth in the overcrowded regions of Asia. . . . If the same situation is to occur in the great overcrowded regions of the Asiatic mainland, the race between the expansion of economic opportunity and the accelerated population growth produced by mortality control would seem to be hopeless. The major demographic need of Asia thus becomes that of devising ways by which the rate of increase of the peasants can be controlled more rapidly than it would be if reliance were placed solely on the slow process of cultural diffusion from the cities to the countryside." In plain English this means that planned parenthood must be adopted by the entire population—and soon.

The Japanese in desperation legalized abortion, but not until the population pressure had become unbearable. If economic

UNIVERSITY OF MICHIGAN LIBRARIES

progress is to continue, birth rates must be rapidly reduced to below replacement levels until the population is reduced to about 60 million.

It can thus be seen that the more-or-less automatic adoption of birth control following economic development will no longer solve the problem of excessive population pressure in most of the world. Unless birth rates are reduced as rapidly as the decline of death rates, the increased products of agriculture and industry will almost certainly be gobbled up by the stork.

Immediate Need: Control of Birth Rate?

THE RAPID CONTROL OF THE BIRTH RATE IS essential if the underdeveloped countries of the world are to complete their demographic transition. If the control of the birth rate must await economic and educational development, as was the case in the Western nations, the situation would appear to be hopeless. Even with prodigious effort the education and economic progress of the underdeveloped countries will take considerable time. The rapid increase in population growth must be curtailed; and now that we have rapid control of the death rate, the only solution is the rapid control of the birth rate.

The control of birth has long been known. The earliest reference to it in recorded history dates back to 1850 B.C. Some form of birth control has been practiced for thousands of years. The practice of birth control was prevalent in France in the 19th century, but it was not until the 20th century that it became an almost universal practice among the people of other Western nations.

From the beginning the knowledge and practice of birth control were suppressed by superstition, religious beliefs and political dogma. Today the dissemination of birth control information and materials is still curtailed by legal restrictions in many countries. Even in the United States, where legal restrictions are

UNIVERSITY OF MICHIGAN LIBRARIES

limited to Massachusetts and Connecticut, and where the practice of birth control is almost universal, primitive techniques still prevail.

The attitude towards birth control stems from our early heritage. High birth rates were essential for the survival of primitive man. The ancient fertility cult continues to be reflected in today's attitude regarding population growth and its control. Even in countries where the practice of birth control is nearly universal there is a conspiracy of silence which inhibits any rational approach to the solution of excessive population pressure.

Opposition to Birth Control

Active opposition to birth control now comes largely from two sources. One source is the Roman Catholic Church. In theory the Catholic Church recognizes the need for controlling population growth and irresponsible reproduction, but the method permitted is neither reliable nor acceptable. The Catholic position was expressed frankly by the Very Reverend W. J. Gibbons, S.J., in a talk before the Population Association of America in 1949, as follows: "Man needs material wealth, but not at the price of losing his soul. Hence as the Catholic sees it, the morally unacceptable in matters of sex, as well as in other departments of life, cannot be used to solve temporal problems. Ecological difficulties arising from population increase or disequilibrium are no exception." In other words, if the "rhythm" method of birth control permitted by the Catholic Church will not check excessive population growth, there must be no control, even if the consequences are extreme poverty and high death rates due to excessive population pressure.

The other source is the Communists, who since Marx have opposed the practice of birth control and the Malthusian doctrine. The Communist position is expressed in a statement by Vasily Nemchinov, a member of the U.S.S.R. Academy of Sciences, as follows: "Food shortages in many countries spring from defects in their social and economic systems. If the survivals of

semifeudal relationships in agriculture are eliminated, and if agriculture is freed from the insupportable burden of land rent, the situation will change. . . . Soviet people believe that, given a rational social system, the achievements of modern science and technology should make it possible to attain a genuine abundance of food in each country and throughout the world. . . . The solution of the world's food problem lies not in reducing the growth of population, but in the radical reorganization of the economic and technical aspects of agricultural production." Yet Russia's food production, per acre and per capita of farm workers, is the lowest of any of the world's industrialized countries.

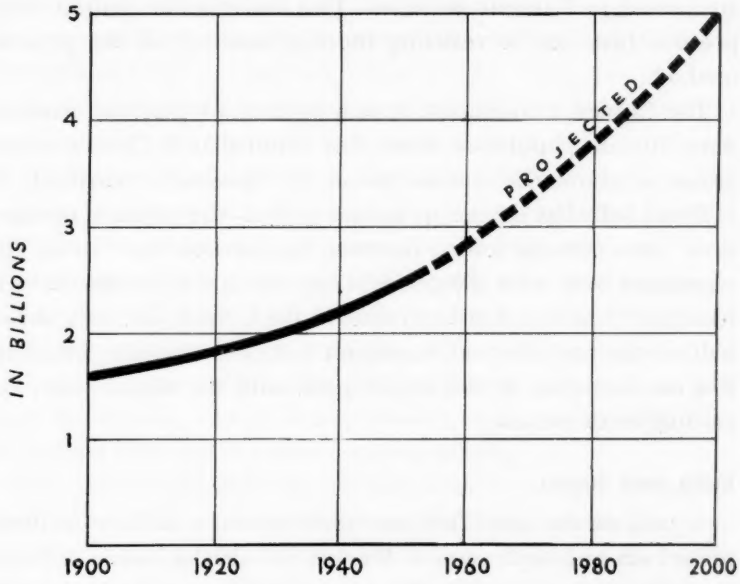
There is still another obstacle—the Victorian tradition which prevents free discussion of any problem related to sex. This censorship has prevented the dissemination of knowledge regarding birth control and contraceptive techniques in many of the Western nations. It has also kept the contraceptive industry on a semi-bootleg status, resulting in exorbitant prices and, in many cases, inferior or defective products.

But in spite of religious beliefs, political dogma and the conspiracy of silence, the practice of birth control is prevalent in Europe, the U.S.S.R., North America and Oceania, regardless of religion or political doctrine. France, a Catholic country, was the first to reduce birth rates below replacement levels and for nearly half a century had an essentially stationary population. Even Italy now has birth rates little above replacement levels, in spite of relatively high birth rates in the south. The Russian delegates at the 1954 International Population Congress in Rome reported that the birth rate in the U.S.S.R. was about 24 per thousand of population, a rate about the same as that of the United States. In Massachusetts and Connecticut, where birth control is restricted by law, the prewar birth rates were less than 15 per thousand and among the lowest in the entire country.

At the national and international levels, however, the ancient beliefs still prevail in the Western world. Government agencies

UNIVERSITY OF MICHIGAN LIBRARIES

WORLD'S GROWING POPULATION



and international organizations are reluctant to even discuss the basic factor in excessive population growth. The subject of birth control is rarely mentioned in conferences on world rehabilitation by the FAO and UNESCO.

Changes Under Way

There is evidence, however, that the world population problem is being identified as the greatest obstacle to peace and prosperity. The Catholic Church has officially recognized the problem of excessive population pressure and irresponsible parenthood. The world-wide essay contest sponsored by the International

Catholic Institute for Social Research in Geneva in 1956 offers a $5,000 prize for the best solution to excessive population which is acceptable to Catholic doctrine. This constructive project may prove a first step to realizing the shortcomings of the present method.

The Chinese Communists appear to have adopted the Moscow party line on population when they claim that if China's population of about 600 million could be "increased manyfold, it [China] fully has the means to deal with it—the means is production." One Chinese leader, however, has advised that "in an environment beset with difficulties it appears that there should be a limit set." The fact that birth rates in the U.S.S.R. are only about half of the physiological maximum indicates that the Russians, like the Catholics, do not always agree with the official policy regarding birth control.

India and Japan

A part of the non-Christian world shows a realistic attitude toward sex and birth control. Premier Jawaharlal Nehru in India was the first political leader who publicly approved of birth control as a means of curtailing population pressure. In 1952 he introduced the first Five-Year Plan for India, which included the following statement: "The recent increase in the population of India and the pressure exercised on the limited resources of the country have brought to the forefront the urgency of family planning and population control. The application of medical knowledge and social care has lowered the death rate while the birth rate remains fairly constant. . . . Population control can be achieved only by the reduction of the birth rate to the extent necessary to stabilize the population at a level consistent with the requirements of national economy." The Indian government has sponsored birth control clinics and is supporting research on contraceptive methods especially adapted to an agrarian and illiterate population.

Japan also adopted a birth control program in 1951, and in

UNIVERSITY OF MICHIGAN LIBRARIES

desperation has gone even further and legalized abortion. It is unfortunate that abortion is so prevalent, but as PEP observes: "The Japanese attitude at least makes more sense than that which at the same time strongly opposes birth control and Japanese methods of trade competition."

In no non-Christian country are there religious beliefs against birth control, but there are various ancient traditions and economic forces which promote large families. However, public opinion surveys in such diverse areas as Japan, India, Puerto Rico and the United States show essentially the same response. Most women want several children, but few want more than four, especially when adequate food and shelter are not available. Faced with the prospect of several children who could be properly fed and educated, or half a dozen or more doomed to poverty and early death, most women in any country would have no difficulty in making a choice—if a choice were available.

It is now much easier to control death rates than to control birth rates. The contraceptives now available are relatively expensive, although the "foam tablets" being tested in India are moderate in cost. Some degree of foresight and responsibility is needed, and in an illiterate population living at subsistence levels these traits may be limited.

An educational program can be effective in some cases. Dr. Y. Koya, of the national Institute of Public Health in Japan, selected three villages as typical of high-birth-rate areas. An educational program and the use of simple techniques reduced birth rates to 13.6 in five years. Although the Japanese rural people are better educated than those in the rest of Asia, it is evident that an educational program can be effective. But the costs are high, and time is short. Research in this field should be given the highest priority and should be well financed, but there is no possibility of government support in this country. Yet we spend billions of dollars in foreign aid which often aggravates the difficulties resulting from population pressure.

It is time that government leaders, members of international

organizations, and directors of foundations engaged in the rehabilitation of underdeveloped countries learned the facts of life and developed enough moral courage to express their opinions. The facts are obvious. With modern death rates no possible increase in food production can keep pace with population growth resulting from uncontrolled birth rates. The Western nations could never have attained high living standards without control of the birth rate. Even the United States cannot long continue a growth rate of 1.5 percent per year. Yet we are reluctant to warn underdeveloped countries, with much more limited resources, that they cannot continue a population growth of 2 or 3 percent per year without disastrous consequences.

As Robert C. Cook, director of the Population Reference Bureau, has pointed out: "Too often, experts in the field of public administration, education, medicine, public health and religion are to all intents and purposes biological illiterates. They can cause mass suffering in the name of the past, and sometimes in the name of religion. When such men expose millions of their fellow beings to the evils of starvation and disease they must be made aware of the ignorance and immorality of their acts."

The situation is well summarized by PEP as follows: "National and international projects to intensify economic development in the hope of winning a race against population increase are in flat contradiction with both theory and experience. These show that substantial and lasting improvements in the standards of life of entire populations are achieved only in those countries where large families give way to small ones on ceasing to be a biological and economic necessity.

"Economic history does not bear out the current assumption that the road to higher living standards is the same as the road to high natural increases. On the contrary, it indicates that the world must choose one way or the other and that the human race is now well past the crossroads and is marching with its back turned to the prospect of higher standards of life. *If higher stand-*

UNIVERSITY OF MICHIGAN LIBRARIES

ards and improved status for the family are to be regarded as a serious objective, and not merely an insincere slogan, something very near a complete about-turn is called for, placing primary emphasis on reducing the natural increase and using economic development soundly and patiently to help those who help themselves [Dr. Sax's italics]."

The proposal made by William Vogt in 1948 that medical and economic aid be made contingent on the adoption of birth control met violent opposition. As PEP points out in this connection, most of the underdeveloped countries must reduce birth rates much faster than the West, but are left with the impression that this is a distasteful measure which no Western government would press upon its own people. Yet the reduction of the birth rate has been an essential and basic element in Western progress. And if birth control is not soon adopted in the underdeveloped countries, population growth must soon be controlled by malnutrition, starvation, disease and conflict.

As we see, however, there are grounds for optimism. The governments of India, Japan and Egypt are sponsoring birth control programs and are supporting contraceptive research. The Communist anti-Malthusian doctrine has been questioned in Hungary, Czechoslovakia and Communist China. The fact that birth rates have declined to moderate levels in the U.S.S.R. and are among the world's lowest in many Roman Catholic countries proves that neither political dogma nor religious doctrine can prevent the spread of birth control. Many leaders in the fields of medicine, agriculture, industry, economics, government and religion in the Western world are becoming alarmed by the explosive growth of the world population. It is to be hoped that they will soon join those in India and Japan in supporting a rational approach to the basic problem which must be solved if the entire world is to enjoy peace and prosperity.

Arnold Toynbee, the distinguished historian, rightly said in his Voice of America broadcast in October 1956:

"The abolition of war, working in combination with the lowering of the death rate through our recent vast improvements in public hygiene, is going to raise, in an acute form, the problem of population that was foreseen by Malthus more than a century and a half ago. Is mankind going to rid itself of two of its three traditional scourges—war and pestilence—only to be done to death by the third scourge, famine? Surely we are not going to be so stupid as that. . . .

"Yet the problem of limiting the birth rate will have to be faced. The alternative is starvation. And freedom from want is now being claimed as a right all over the world, even in regions where, till lately, wholesale death by famine was still being taken as a matter of course."

UNIVERSITY OF MICHIGAN LIBRARIES

Talking It Over

IN THIS DISCUSSION GUIDE YOU WILL FIND discussion topics, reading references, and suggestions for visual aids[1] arranged for eight weekly meetings. These can be contracted or expanded according to the time at your disposal and the special interests of those who are participating in the discussion.

If you need any help or guidance to set up a discussion group or organize the special project suggested at the end of this discussion outline, write to Dorothy B. Robins, Consultant on Special Programs, Foreign Policy Association, 345 East 46th Street, New York 17, New York.

[1] Unless otherwise noted, all films are 16 mm, sound, and in black and white.

Discussion Questions

The population problem is a complex and controversial subject, having to do with human reproduction, medicine, agriculture, industry, economics, political philosophy and religion. Many books and articles on the subject have been written during recent years. Some experts contend that world resources, if properly developed, could meet all needs regardless of population growth. Others support the laissez-faire policy about control of population growth, arguing that the demographic transition is the natural course of human evolution. The pessimists see only a dismal future for mankind, with all of the world's people living at subsistence levels. No other field in the social sciences offers more grounds for differences of opinion and violent controversy.

1. Population Growth — Past, Present and Future

Why did human populations grow so slowly in the past and so rapidly in recent centuries? What is the future of population growth? What are the dangers?

READING REFERENCES

The early history of population growth is described by the following:

Carr-Saunders, W. F., *World Population: Past Growth and Present Trends.* London, Oxford University Press, 1936.

Huxley, Julian, "Population and Human Destiny." *Harpers Magazine,* September 1950.

More recent trends are described by the following:

Naismith, Grace, "The Tidal Wave of World Population." *United Nations World,* Vol. 4, 1950, p. 33.

Political and Economic Planning (PEP), *World Population and Resources.* London Allen & Unwin, 1955.

Thompson, W.S., *Plenty of People.* New York, Ronald, 1948.

United Nations, *Determinants and Consequences of Population Trends, 1954.* New York, United Nations, 1954.

Medical science in promoting population growth is described by the following:

Dorn, H. F., "The Effect of Public Health Developments upon Population Growths." *Annals of the New York Academy of Sciences,* Vol. 54, 1952, pp. 742-49.

UNIVERSITY OF MICHIGAN LIBRARIES

2. The Demographic Transition

How did the Western nations achieve high living standards? What was the role of the New World? Is rapid population growth needed for economic development?

READING REFERENCES

General accounts of the demographic transition are found in the following:

Bates, Marston, *The Prevalence of People*. New York, Scribner, 1955.
Brown, Harrison, *The Challenge of Man's Future*. New York, Viking, 1954.
Cook, Robert, *Human Fertility*. New York, Sloane, 1951.
Davis, Kingsley, "The World Demographic Transition." *The Annals of the American Academy of Political and Social Science*, January 1945.
Hertzler, J. O., *The Crisis in World Population*. Lincoln, University of Nebraska Press, 1956.
PEP, *World Population and Resources*. Cited.
Sax, Karl, *Standing Room Only*. Boston, Beacon, 1955.
Spengler, Joseph J., "Population Theatens Prosperity." *Harvard Business Review*, January-February 1956. (Refutes the theory that population growth is an economic asset in the United States.)

VISUAL AID

The Shoemaker and the Hatter. Produced in 1951 for the United States Economic Cooperation Administration. 15 min. Color. Rental, free, from the International Cooperation Administration, Washington 25, D.C. An animated cartoon about a hatter who believes in high tariffs, low production, and a high profit per item and a shoemaker who believes in free exchange of goods, high productivity and low costs. This film presents the view that the latter conditions enable a society to keep a high standard of living in spite of increasing population.

3. World Resources, Food, Minerals, Energy

Are world resources adequate for larger populations? Where are the resources in relation to the needs of different countries?

Can advances in science provide new sources of food, metals and energy?

READING REFERENCES

Exploitation of arable land is considered by the following:

Gill, Tom, *Land Hunger in Mexico*. Washington, Charles Lathrop Pack Forestry Foundation, 1951.
Osborn, Fairfield, *Our Plundered Planet*. Boston, Little, 1948.
Vogt, William, *The Road to Survival*. New York, Sloane, 1948.

Arable land of the world is considered by the following:

Stamp, Dudley, *Land for Tomorrow*. Bloomington, Indiana University Press, 1952.

Land and other resources considered by the following:

Hatt, Paul K., ed., *World Population and Future Resources*. New York, American, 1952.

PEP, *World Population and Resources.* Cited.

Woytinsky, W. S., and E. S., *World Population and Production: Trends and Outlook.* New York, The Twentieth Century Fund, 1953.

Zimmerman, Erich W., *World Resources and Industries.* New York, Harper, 1951.

VISUAL AID

The World Is Rich. Produced in 1947 for the British Ministry of Food. 43 min. Rental, $6.00, from Brandon Films, 200 West 57th Street, New York 19, N.Y. Deals with the world food situation today. The shortage of food throughout the world is still acute. The war was only partly the cause. The film emphasizes that backwardness of many countries coupled with floods and droughts never allowed enough food to feed all the people of the world properly. The plan drawn up by the UN's Food and Agricultural Organization for the permanent improvement of farming throughout the world is described.

4. Agriculture — Food for the World

How well do the world's people eat? How much more food can be grown? How much is needed? Can orthodox agriculture meet the needs?

READING REFERENCES

The best recent surveys of present needs and production are as follows:

Russell, Sir John, *World Population and World Food Supplies.* London, Allen & Unwin, 1954.

United Nations Food and Agriculture Organization (FAO), *World Food Survey.* New York, United Nations, 1952.

On future prospects for new sources of food see the following:

"Freedom from Want." Articles by J. D. Black, R. M. Salter, *et al.* in *Chronica Botanica.* Waltham, Mass., 1948.

The results of malnutrition are vividly described by the following:

Castro, Josue de, *Geography of Hunger.* Boston, Little, 1952.

Two excellent books on agriculture and world needs are as follows:

Clark, L. Le Gros, and Pirie, N. W., eds., *Four Thousand Million Mouths.* London, Oxford University Press, 1951.

Schults, T. W., ed., *Food for the World.* Chicago, University of Chicago Press, 1945.

More pessimistic is the following:

Pearson, F. A., and Harper, F. A., *The World's Hunger.* Ithaca, Cornell University Press, 1945.

VISUAL AID

Food and People. Produced in 1956 by Encyclopedia Britannica Films (EBF). 23 min. Rental, $5.00, from EBF, 1150 Wilmette Ave., Wilmette, Ill. Draws a contrast between people who have plenty to eat and those who have next to nothing. Emphasizes that with free world trade, peoples of all nations will benefit, and suggests that a world of plenty provides greater chances for individual security and world peace.

UNIVERSITY OF MICHIGAN LIBRARIES

5. Industrial Resources

Are reserves of metals and energy adequate to permit the industrial development of all nations? Can new techniques expand resources?

READING REFERENCES

World surveys have been made by the following:

Ayres, E., "The Fuel Situation." *Scientific American,* October 1956.
Ayres, E., and Scarlott, C.A., *Energy Sources, The Wealth of the World.* New York, McGraw, 1952.
McCabe, L. C., *World Resources and Consumption of Energy.* New York, United Nations, 1951.
President's Materials Policy Commission, *Resources of Freedom* (Paley Report). Washington, United States Government Printing Office, 1952.
United Nations, *Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources.* New York, United Nations, 1949.

The fantastic increase in consumption of resources is discussed by the following:

Hubberts, M. K., "Energy from Fossil Fuels." *Science,* Vol. 109, 1949, p. 103-9.
Ordway, S. H., *Resources and the American Dream.* New York, Ronald, 1953.
Raushenbush, Stephen, ed., "The Future of Our Natural Resources." *The Annals of the American Academy of Political and Social Science,* May 1952.

6. New Frontiers of Science

Can science develop new sources of minerals and energy? Can new sources of food be developed? What is the future of atomic and solar energy?

READING REFERENCES

Excellent surveys of future possibilities are found in the following:

Ayres, Eugene, "Power from the Sun." *Scientific American,* August 1950.
Brown, Harrison, *The Challenge of Man's Future.* Cited.
Putnam, P. C., *Energy in the Future.* New York, Van Nostrand, 1953.

Algae culture for food and energy is considered by the following:

Burlew, John S., *Algae Culture—From Laboratory to Pilot Plant.* Washington, Carnegie Institution of Washington, 1953.

Some good material, mixed with science fiction, is found in the following:

Brittain, R., *Let There Be Bread.* New York, Simon & Schuster, 1952.
Glesinger, Egon, *The Coming Age of Wood.* New York, Simon & Schuster, 1949.
Rosin, Jacob, and Eastman, Max, *The Road to Abundance.* New York, McGraw, 1953.

VISUAL AID

A Is for Atom. Produced in 1953 by General Electric Co. 15 min. Color. Rental, free, from all General Electric offices. An animated film explaining in lay terms what an atom is, how energy is released from certain kinds of atoms, the peacetime uses of atomic energy, and the by-products of nuclear fission.

7. Prospects of Underdeveloped Countries

Can the underdeveloped countries of Asia, Africa and Latin America complete their demographic transition? How does modern medicine complicate the problem?

Can these countries support much larger populations? If not, what are the major obstacles?

READING REFERENCES

Excellent surveys of conditions in Latin America, Japan, China, India and the Muslim world are found in the following:

Notestein, F. W., ed., *Demographic Studies of Selected Areas of Rapid Growth*. New York, Milbank Memorial Fund, 1944. See especially chapter on Japan by Irene B. Taeuber and Edwin G. Beal; on India by Kingsley Davis; on population policy by Notestein.

Raushenbush, S., ed., "World Population in Transition." *The Annals of the American Academy of Political and Social Science,* January 1945.

The problems of India are discussed by the following:

Chandrasekhar, S., *Hungry People and Empty Lands*. Baroda, *Indian Institute for Population Studies,* 1952.

Davis, Kingsley, *The Population of India and Pakistan*. Princeton, Princeton University Press, 1951.

Forbes, William H., "What Will India Eat Tomorrow?" *Atlantic Monthly,* August 1951.

The following is an excellent book on China by a medical missionary:

Winfield, Gerald F., *China, The Land and the People*. New York, Sloane, 1948.

VISUAL AID

New South Asia. Produced in 1953 by the National Film Board of Canada. 30 min. Rental, $5.00, from National Film Board of Canada, 630 Fifth Ave., New York 20, N.Y. A report on social and economic progress in India, East and West Pakistan, Burma, Ceylon, and Indonesia. Points out the spirit of nationalism and the advances in health and living standards.

8. Control of Birth Rate

How long has birth control been known and practiced? What led to the almost universal practice of birth control in the Western world?

Is there a danger of "race suicide" by too low birth rates? What are the obstacles to the spread of birth control in underdeveloped countries?

READING REFERENCES

The history and current status of birth control are described by the following:

Dickenson, R. L., *Techniques of Conception Control*. Baltimore, Williams & Wilkins, 1936.

Himes, N. E., *Medical History of Contraception*. Baltimore, Williams & Wilkins, 1936.

Rock, John, and Loth, David, *Voluntary Parenthood*. New York, Random House, 1949.

Economic aspects of the contraceptive industry are discussed by the following:

Fortune Magazine, editors of, *The Accident of Birth*. New York, Rinehart, 1938.

The ignorance of American women regarding birth control is discussed by the following:

Pearl, Raymond, *The Natural History of Population*. London, Oxford University Press, 1939.

Political and religious suppression of birth control is discussed by the following:

Sax, Karl, *Standing Room Only*. Cited.

Policies designed to increase as well as decrease birth rates are fully discussed by the following:

PEP, *World Population and Resources*. Cited.

CARE Food Crusade

Vast stocks of farm goods surpluses stored in warehouses, feeding no one in the United States, are made available to CARE for relief distribution abroad where people suffer from food scarcities and dietary deficiencies. Contributions (tax-deductible) to CARE cover the delivery costs.

Staples are assembled in 12 different package assortments to meet varying food needs in 19 countries of Europe, Asia, the Middle East and Latin America. The name and address of the donor go with every package, making it a personal gift. Donors may designate the countries they wish to help from the listed delivery areas. CARE mission chiefs, Americans stationed abroad, supervise distributions to needy families and institutions.

For full information, write CARE, 660 First Avenue, New York 16, N.Y. Contributions for the "Food Crusade" may also go directly to that address.

The ABC's of FPA

If it's important—and if it concerns world affairs—the Foreign Policy Association will help you do something about it. Founded in 1918, FPA is the only national, nonprofit, impartial, public-membership organization devoted to education on all important aspects of international relations.

Through publications, speakers, program services, special events and cooperation with local organizations FPA provides authoritative information on international questions. FPA is not an "action" group and does not seek to promote particular points of view.

The Headline Series

The *Headline Series* and its companion publication, the semi-monthly *Foreign Policy Bulletin,* present the facts, clearly and concisely, on pressing problems of national concern. Discussion questions, reading and film suggestions and program ideas are included in each issue of the *Headline Series.*

'Can I Help?'

Yes—membership in the national Foreign Policy Association is open to everyone interested in a constructive American foreign policy. Regular Members at $6.00 a year and Cooperating Members at $10.00 receive the *Headline Series* and the *Foreign Policy Bulletin.* Student Membership is $3.50.

If you are interested in joining a local FPA or World Affairs Council, write for the name of the one nearest you.

Foreign Policy Association, Incorporated

National Office

345 East 46th Street **New York 17, N. Y.**

OXford 7-2432

National sponsors of "Decisions . . . USA"

UNIVERSITY OF MICHIGAN LIBRARIES

The Headline Series	*No.*
Underdeveloped Lands: 'Revolution of Rising Expectations'	119
Mainsprings of World Politics	118
The Many Uses of the Atom	117
U.S. Foreign Policy: 1945-1955	116
Great Decisions: The U.S. Looks Ahead	115
The New Britain	114
Disarmament: Atoms into Plowshares?	113
The Future of Austria	112
Russia After Stalin	111
New Nations of Southeast Asia	110
South Africa	109
The U.S. and the UN	107
Our Stake in World Trade	106
India Since Independence	105
The New Japan	102
The U.S. and Latin America	100
The Emergence of Modern Egypt	98

. . . and many other titles

Statement Required by the Act of August 24, 1912, as Amended by the Acts of March 3, 1933, and July 2, 1946 (Title 39, United States Code, Section 233) showing the Ownership, Management, and Circulation of

HEADLINE SERIES

Published bimonthly at New York, N.Y., for October 1, 1956.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher—Foreign Policy Association, Incorporated, 345 East 46 Street, New York 17, N.Y.; Editor—Vera Micheles Dean, 345 East 46 Street, New York 17, N.Y.; Managing editor—none; Business manager—none.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.) Foreign Policy Association, Incorporated, 345 East 46 Street, New York 17, N.Y.; John W. Nason, President, 345 East 46 Street, New York 17, N.Y.; Edgar M. Church, Treasurer, 164 East 72 Street, New York 21, N.Y.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

VERA M. DEAN, Editor

Sworn to and subscribed before me this 25th day of September, 1956.

DON DENNIS
Notary Public, State of New York
No. 60-0922165
Qualified in Westchester County
Commission expires March 30, 1957

[SEAL]

FOREIGN POLICY ASSOCIATION

In the next issue

Decisions . . . 1957

by a group of experts